Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listings of Claims:

1. (original) A method of forming an isolated pocket in a semiconductor substrate comprising:

providing a semiconductor substrate of a first conductivity type;

forming a field oxide layer at a surface of the substrate, the field oxide layer comprising a first section and a second section, the first and second sections being separated by an opening;

performing a first implant of a dopant of a second conductivity type opposite to the first conductivity type through the opening and through the first and second sections of the field oxide layer so as to form a deep layer of the second conductivity type, the deep layer comprising a deeper portion under the opening and shallower portions under the first and second sections of the field oxide layer;

forming a mask layer over the opening;

performing at least one additional implant of a dopant of the second conductivity type through the first and second sections of the field oxide layer, to form sidewalls in the substrate, the sidewalls extending from a bottom of the first and second sections of the field oxide layer, respectively, and into the deep layer, the mask layer preventing dopant from the at least one additional implant from entering an area of the substrate below the opening, the deep layer and the sidewalls forming an isolation region that borders an isolated pocket of the substrate.

2. (new) The method of Claim 1 wherein the substrate does not include an epitaxial layer.

3. (new) The method of Claim 1 wherein the method does not include forming an epitaxial layer prior to forming a field oxide layer.

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4. (new) The method of Claim 1 wherein the field oxide layer comprises third and fourth sections separated by a second opening, and wherein performing at least one additional implant includes implanting dopant of the second conductivity type through the third and fourth sections and the second opening, thereby forming a second layer of the second conductivity type, the second layer comprising a deeper portion under the second opening and a shallower portion under the third and fourth sections of the field oxide layer, the shallower portion abutting the surface of the substrate, the second layer thereby forming a second isolation region that borders a second isolated pocket of the substrate.

5. (new) The method of Claim 4 wherein the first isolated pocket is designed for holding a X-volt device and the second isolated pocket is designed for holding a Y-volt device and wherein X is greater than Y.

6. (new) The method of Claim 5 wherein X is equal to about 12 and Y is equal to about 5.

7. (new) The method of Claim 1 comprising performing a third implant of a dopant of the second conductivity type through the first opening and applying heat to the substrate to diffuse the third implant so as to form a first well of the second conductivity type, performing a third implant and applying heat being performed before performing a first implant or performing at least one additional implant.

8. (new) The method of Claim 7 wherein the method is performed such that the deep layer and the first well overlap.

9. (new) The method of Claim 7 wherein the substrate is not exposed to a thermal process that causes a significant diffusion of the dopant of the second conductivity type after either the first implant and the at least one additional implant are performed.

10. (new) The method of Claim 1 wherein the substrate is not exposed to a thermal process that causes a significant diffusion of the dopant of the second conductivity type after either of the first implant and the at least one additional implant are performed.

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11. (new) The method of Claim 1 wherein the first implant is performed at an energy that is greater than an energy at which the at least one additional implant is performed.

12. (new) The method of Claim 1 wherein the first layer is implanted such that a lower edge of the deeper portion of the first layer is 1.5 to 4.0 microns below the surface of the substrate.

13. (new) A method of forming an isolated pocket in a semiconductor substrate comprising:

providing a semiconductor substrate of a first conductivity type;

forming a field oxide layer at a surface of the substrate, the field oxide layer comprising a first section and a second section, the first and second sections being separated by an opening; and

performing an implant of a dopant of a second conductivity type opposite to the first conductivity type through the opening and through the first and second sections of the field oxide layer so as to form a layer of the second conductivity type, the layer comprising a deeper portion under the opening and a shallower portion under the field oxide layer, the shallower portion abutting the surface of the substrate, the layer thereby forming an isolation region that borders an isolated pocket of the substrate.

14. (new) The method of Claim 13 wherein the isolated pocket is designed for holding a 5V device.

15. (new) The method of Claim 13 comprising performing a second implant of a dopant of the second conductivity type through the opening and applying heat to the substrate to diffuse the second implant so as to form a well of the second conductivity type, performing a second implant and applying heat taking place before performing a first implant.

16. (new) The method of Claim 15 wherein the method is performed such that the layer and the well overlap.

17. (new) The method of Claim 13 wherein the substrate is not exposed to a thermal process that causes a diffusion of the dopant of the second conductivity type after the first implant is performed.

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